

WHAT IS CLAIMED IS:

1. A method of implementing a user interface for a program running on a computer, the method comprising the steps of:
 - presenting a user interface to a user, the user interface having at least three different user-selectable operating modes, wherein a size of a displayed region presented to the user in each of the at least three operating modes is different; and
 - presenting a different set of controls for controlling the program to the user in each of the at least three operating modes.
2. The method of claim 1, wherein each of the at least three operating modes has a different shape.
3. The method of claim 1, wherein a first one of the at least three operating modes has a first size, a second one of the at least three operating modes has a size of about one third of the area of the first size, and a third one of the at least three operating modes has a size of about one thirtieth of the area of first size.
4. The method of claim 1, wherein the operating modes are selected by clicking on a change-size control region.
5. The method of claim 1, wherein the operating modes are selected by double-clicking on a background portion of a current operating mode.
6. The method of claim 1, wherein the program comprises a media player application program, and each of the at least three operating modes controls playback of the media.

7. The method of claim 6, wherein the media player program comprises an audio player.

8. A method of implementing a user interface for a program running on a computer, the method comprising the steps of:

presenting a first user interface to a user, the first user interface having a first size;

accepting a first command from the user, using the first user interface, to change the size of the user interface;

presenting a second user interface to the user in response to the first command, the second user interface having a second size different from the first size;

accepting a second command from the user, using the second user interface, to change the size of the user interface; and

presenting a third user interface to the user in response to the second command, the third user interface having a third size different from the first size and the second size.

9. The method of claim 8, further comprising the steps of:

accepting a third command from the user, using the third user interface, to change the size of the user interface;

presenting the first user interface to the user in response to the third command.

10. The method of claim 8, wherein the second size has an area that is about one third of the first size, and the third size has an area that is about one thirtieth of the first size.

11. The method of claim 8, wherein the first, second, and third user interfaces all have different shapes.

12. The method of claim 8, wherein the first command comprises a click on a change-size control region, and wherein the second command comprises a click on a change-size control region.

13. The method of claim 8, wherein the first command comprises a double-click on a background portion of the first user interface, and the second command comprises a double-click on a background portion of the second user interface.

14. The method of claim 8, wherein the program comprises a media player application program, and playback of the media is controlled by each of the first, second, and third user interfaces

15. The method of claim 14, wherein the media player application comprises an audio player.

16. A method of implementing a user interface for a program running on a computer, the method comprising the steps of:

 providing a region on a display having a first control area and a second control area;

 wherein the first control area includes a plurality of control regions that, when selected, control operation of the program, and

 wherein the second control area displays information and control menus that depend on an operating mode of the program,

 wherein a layout of the first control area is configurable in accordance with a user-selectable configuration file, and a layout of the second control area is independent of the user-selectable configuration file.

17. The method of claim 16, wherein the control regions in the first control area and the menus in the second control area are selected using a pointing device connected to the computer.

18. The method of claim 16, wherein a color scheme of the second control area is configurable in accordance with the user-selectable configuration file.

19. The method of claim 16, wherein the program comprises a media player application program.

20. The method of claim 19, wherein the media player application comprises an audio player.

21. A method of implementing a virtual instrument on a computer, the method comprising the steps of:

 displaying a background region having an outer boundary;

 displaying a plurality of control regions within the outer boundary, wherein actuation of the control regions control operation of the virtual instrument;

 displaying a window region within the outer boundary; and

 displaying status information about the virtual instrument and context-sensitive menus that control the instrument in the window region.

22. The method of claim 21, wherein the control regions and the context-sensitive menus are operated using a pointing device connected to the computer.

23. The method of claim 21, wherein a layout of the control regions on the background region is configurable in accordance with a user-selectable configuration file, and a layout of the

status information and context-sensitive menus displayed in the window is independent of the user-selectable configuration file.

24. The method of claim 21, wherein the virtual instrument comprises a media player.

25. The method of claim 24, wherein the virtual instrument comprises an audio player.

26. A method of implementing a user interface for a program running on a computer, the method comprising the steps of:

displaying a first user interface region on a display, during a first time, the first user interface region having a first outer boundary and a first set of controls located within the first outer boundary that control operation of the program; and

modifying the user interface region on the display by adding, during a second interval of time, a supplemental region that is contiguous to the first user interface region and extends outside the first outer boundary, the supplemental region containing a second set of controls that control operation of the program.

27. The method of claim 26, wherein the first user interface region includes a boundary expansion control located within the first outer boundary of the user interface region, and actuation the boundary expansion control triggers the modifying step.

28. The method of claim 26, wherein the modifying step is triggered automatically in response to actuation of a predetermined operating mode of the program.

29. The method of claim 26, wherein more important functions of the program are controlled by the first set of controls, and less important functions of the program are controlled by the second set of controls.

30. The method of claim 26, wherein the user interface region includes a boundary contraction control, wherein actuating the boundary contraction control causes the supplemental region to disappear and causes the outer boundary of the user interface region to return to the first outer boundary.

31. The method of claim 26, wherein, when the boundary expansion control is actuated, the supplemental region extends out of the user interface region slowly, with a sliding action.

32. The method of claim 26, wherein the user interface region comprises controls for a media player, and the second set of controls comprises a plurality of frequency equalization controls.

33. The method of claim 26, wherein the user interface region comprises controls for an audio player, the first set of controls comprises play and stop controls, and the second set of controls comprises a multi-band audio frequency equalizer.

34. A method of implementing a user interface for a program running on a computer, the method comprising the steps of:

 displaying, on a display, for a first interval of time, a user interface display in a first operating state in which the user interface display has a first outer boundary and a first set of controls located within the first outer boundary; and

displaying, on the display, for a second interval of time, the user interface display in a second operating state in which a portion of the user interface display extends outside the first outer boundary, with a second set of controls located on the user interface display outside the first boundary and the first set of controls located on the user interface display inside the first boundary,

wherein operation of the program in the first operating modes is controlled only by the first set of controls, and operation of the program in the second operating modes is controlled by the first set of controls and the second set of controls.

35. The method of claim 34, wherein the user interface display depicts a media player, and the second set of controls comprises a plurality of frequency equalization controls.

36. The method of claim 34, wherein the user interface display depicts an audio player, the first set of controls comprises play and stop controls, and the second set of controls comprises a multi-band audio frequency equalizer.

37. A method of implementing a user interface for a program running on a computer, the method comprising the steps of:

displaying, on a display, for a first interval of time, a main user interface region with a extension user interface region contiguous to the main user interface region, the extension user interface region including a set equalizer controls that are accessible during the first interval of time; and

displaying, on the display, for a second interval of time, the main user interface region without the extension user interface region, whereby the set of equalizer controls located on the supplemental control region is not accessible during the second interval of time.

38. The method of claim 37, further comprising the steps of:

displaying, on the display, a gradual transition of the extension user interface region moving from the displayed state to the non-displayed state, with a sliding motion; and

displaying, on the display, a gradual transition of the extension user interface region moving from the non-displayed state to the displayed state, with a sliding motion.

39. The method of claim 37, further comprising the step of displaying, on the display, a set of controls on the main user interface region that are accessible whether or not the extension user interface region is displayed.

40. The method of claim 37, wherein the user interface region comprises play and stop controls that are always accessible.

41. A user interface method for displaying progress of access to a plurality of items in a list, the method comprising the steps of:

providing an indicator that travels through a plurality of regions, each of the regions corresponding to a respective one of the items; and

moving the indicator, when an item in the list is accessed, into the region corresponding to the item being accessed.

42. A user interface method for displaying playback progress of a plurality of tracks in a media player, the method comprising the steps of:

providing a playlist indicator that travels through a plurality of regions, each of the regions corresponding to a respective one of the tracks; and

moving the playlist indicator, when playback of a track by the media player begins, into the region corresponding to the track being played.

43. A user interface method for displaying playback progress of a plurality of tracks in a media player, the method comprising the steps of:

providing a playlist indicator that travels through a plurality of regions, each of the regions corresponding to a respective one of the tracks; and

moving the playlist indicator, when a track is being played by the media player, through the region corresponding to the track being played.

44. The method of claim 43, further comprising the step of providing a track progress indicator, wherein the track progress indicator moves at a relatively constant speed from a start position to an end position as playback progresses from a beginning of a track to an end of a track, for each track.

45. The method of claim 43, wherein a size of all of the regions is substantially the same.

46. The method of claim 43, wherein the playlist indicator moves at a relatively constant speed from a beginning of each of the regions to an end of each of the regions as playback progresses from a beginning of the corresponding track to an end of the corresponding track.

47. The method of claim 46, wherein the playlist indicator is implemented using a bar graph.

48. The method of claim 46, wherein the playlist indicator is implemented using a plurality of individual display elements arranged in a straight line, and a display characteristic of the individual display elements is changed sequentially to indicate progress through the tracks.

49. The method of claim 46, wherein the playlist indicator is implemented using a plurality of individual display elements arranged along a curved path, and a display characteristic of the individual display elements is changed sequentially to indicate progress through the tracks.

50. The method of claim 43, wherein selecting a region of the playlist causes the media player to play the track corresponding to the selected region.

51. The method of claim 50, wherein the selecting of the region of the playlist is accomplished by clicking a button on a mouse.

52. The method of claim 43, wherein selecting a position within a selected region of the playlist causes the media player to play the track corresponding to the selected region, starting

at a position within the track that is proportional to the selected position within the selected region.

53. The method of claim 52, wherein the selecting of the position within the region of the playlist is accomplished by clicking a button on a mouse.

54. A method of implementing a user interface for a multi-band controller, the method comprising the steps of:

 displaying a plurality of controls, each set to an initial setting, wherein each of the controls controls a level for each of a plurality of bands, respectively;

 accepting a user adjustment of a setting of one of the controls; and

 adjusting, in response to the user adjustment, control settings that were not adjusted by the user.

55. The method of claim 54, wherein each of the bands is a band of audio frequencies.

56. The method of claim 54, wherein each of the controls comprises a slide control.

57. A method of implementing a user interface for a multi-band frequency equalizer, the method comprising the steps of:

 displaying a plurality of controls, wherein each of the controls controls an output level for each of a plurality of frequency bands, respectively;

 displaying an initial level setting for each of the frequency bands;

 accepting a user adjustment of a setting of one of the controls;

adjusting, in response to the user adjustment, controls that were not adjusted by the user; and

displaying an adjusted level setting for each of the frequency bands.

58. The method of claim 57, further comprising the step of storing an initial level setting for each of the frequency bands,

wherein, in the adjusting step, the setting of each control that was not adjusted by the user is adjusted by an amount inversely proportional to the square of the distance to the control that was adjusted, after the user adjustment of the setting has been finalized.

59. A method of implementing a user interface for a multi-band frequency equalizer in a media player, the method comprising the steps of:

(a) providing a media player;
(b) displaying a plurality of controls, each set to an initial setting, wherein each of the controls controls an output level for each of a plurality of audio frequency bands, respectively;

(c) accepting a user adjustment of a setting of one of the controls;

(d) adjusting, in response to the user adjustment, control settings that were not adjusted by the user; and

(e) adjusting frequency characteristics of playback by the media player in accordance with the setting of the control that was adjusted by the user and the control settings that were adjusted in step (d).

60. The method of claim 59, wherein each of the controls comprises a slide control.

61. The method of claim 59, wherein the indication that the setting adjustment of the control has been completed comprises releasing a button on a mouse.

62. The method of claim 59, further comprising the step of storing the initial setting for each of the controls, wherein step (d) comprises the steps of:

waiting for an indication that the user adjustment of the control has been completed; and

adjusting the settings for the controls that were not adjusted by the user to form a smooth curve that includes the adjusted setting of the user-adjusted control.

63. The method of claim 59, further comprising the step of storing the initial setting for each of the controls, wherein the step (d) comprises the steps of:

waiting for an indication that the user adjustment of the control has been completed; and

adjusting the settings for the controls that were not adjusted by the user by an amount that depends on the adjustment of the control that was user-adjusted and a proximity to the user-adjusted control.

64. The method of claim 59, wherein the indication that the setting adjustment of the control has been completed comprises releasing a button on a mouse.

65. A method of implementing a user interface control on a computer display, comprising the steps of:

(a) displaying a control region on the display with visual characteristics that distinguish the control region from a background;

(b) detecting when a user has selected the control region;

(c) momentarily increasing the brightness of the displayed control region in response to the detection made in step (b); and

(d) initiating a control function in response to the detection made in step (b).

66. The method of claim 65, wherein step (b) comprises the step of detecting when a user has used a mouse to click on the control region.

67. The method of claim 65, wherein the control region is circular.

68. A method of implementing a user interface for a media player with a computer-generated display, the method comprising the steps of:

(a) displaying a control region on the display with visual characteristics that distinguish the control region from a background;

(b) detecting when a user has selected the control region;

(c) momentarily increasing the brightness of the displayed control region in response to the detection made in step (b); and

(d) initiating a playback function of the media player in response to the detection made in step (b).

69. The method of claim 68, wherein step (b) comprises the step of detecting when a user has used a mouse to click on the control region.

70. The method of claim 68, wherein the control region is circular.

71. A method of implementing a dual-function user interface region on a computer display, comprising the steps of:

(a) displaying a control region at a given location on the display, the control region having a first color;

(b) detecting when a user has selected the control region while the control region has the first color;

(c) gradually fading out the first color of the control region in response to the detection made in step (b);

(d) gradually fading in a second color for the control region in response to the detection made in step (b); and

(e) initiating a first control function in response to the detection made in step (b).

72. The method of claim 71, wherein step (b) comprises the step of detecting when a user has used a mouse to click on the control region.

73. The method of claim 71, wherein the fade out and fade in occurs over a user-selectable period of time.

74. The method of claim 71, wherein the fade out and fade in occurs in accordance with a predetermined function.

75. The method of claim 71, wherein the fade out takes about 200 mSec in step (c) and the fade in takes about 200 mSec in step (d).

76. The method of claim 71, wherein the control region is circular.

77. The method of claim 71, further comprising the steps of

(f) detecting when a user has selected the control region while the control region has the second color;

(g) gradually fading out the second color of the control region in response to the detection made in step (f);

(h) gradually fading in the first color for the control region in response to the detection made in step (f); and

(i) initiating a second control function in response to the detection made in step (f).

78. The method of claim 77, wherein the first control function is a starting of playback in a media player, and the second control function is a stopping of playback in the media player.

79. The method of claim 78, wherein the first color is green, and the second color is red.

80. The method of claim 78, wherein the control region comprises a triangle icon while the control region has the first color, and the control region comprises a square icon while the control region has the second color.

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81. A method of presenting information to a user on a computer-generated display, the method comprising the steps of:

introducing an image containing information into a display window so as to create an appearance that the introduced image is sliding into the display window; and

removing an image containing information from the display window so as to create an appearance that the removed image is sliding out of the display window.

82. A method of presenting menus to a user of a media player having a display window, the method comprising the steps of:

introducing an image containing a menu relating to operation of the media player into the display window so as to create an appearance that the introduced image is sliding into the display window; and

removing an image containing a menu relating to operation of the media player from the display window so as to create an appearance that the removed image is sliding out of the display window.

83. The method of claim 82, wherein the introduced image further contains status information.

84. The method of claim 82, wherein, in the introducing step, the introduced image slides into the display window from a side of the display window, and wherein, in the removing step, the removed image slides out of the display window to the side of the display window.

85. The method of claim 82, wherein, in the introducing step, the introduced image slides into the display window from a bottom of the display window, and wherein, in the removing step,

the removed image slides out of the display window to the bottom of the display window.

86. The method of claim 82, wherein, in the introducing step, the introduced image slides into the display window from a corner of the display window, and wherein, in the removing step, the removed image slides out of the display window to the corner of the display window.

87. The method of claim 82, wherein a rate that the images slide into and out of the display window is user-selectable.

88. A method of providing visual effects for a media player running under a window-based operating system on a computer, the method comprising the steps of:

displaying, in a single window of the window-based operating system, a user interface region with a display window integrated into the user interface region; and

displaying, on the display window, visual effects corresponding to material being played on the media player.

89. The method of claim 88, further comprising the step of displaying text superimposed over the visual effects displayed on the display window.

90. The method of claim 88, wherein the visual effects displayed on the display window are generated based on bit-mapped data.

91. The method of claim 88, wherein the window-based operating system is Linux or Microsoft® Windows.

92. A method of implementing a user interface for a program running on a computer, the method comprising the steps of:

(a) displaying, on a display, for a first interval of time, a main user interface region with a extension user interface region contiguous to the main user interface region, the extension user interface region including a set of control regions; and

(b) displaying, on the display, for a second interval of time, the main user interface region without the extension user interface region, whereby the set of control regions located on the extension user interface region are not accessible during the second interval of time.

93. The method of claim 92, further comprising the steps of:

displaying, on the display, during a third interval of time, a sliding transition of the extension user interface region from the displayed state to the non-displayed state; and

displaying, on the display, during a fourth interval of time, a sliding transition of the extension user interface region moving from the non-displayed state to the displayed state.

94. The method of claim 92, further comprising the step of displaying, on the display, a set of controls on the main user interface region that are accessible both when the extension user interface region is in the non-displayed state and when the extension user interface region is in the displayed state.

95. The method of claim 92, wherein step (a) is performed in response to a user positioning a pointer over the main user interface region, and step (b) is performed in response to a user positioning a pointer away from both the main user interface region and the extension user interface region.

96. The method of claim 95, wherein the user positions the pointer by moving a mouse.

97. The method of claim 96, wherein step (a) and step (b) are initiated without mouse clicks.

98. The method of claim 92, wherein the display is implemented on window-based operating system, the window containing the main user interface region is set to be always on top, and step (a) is performed in response to a user positioning a pointer over the main user interface region even when the main user interface region is not an active window, and step (b) is performed in response to a user positioning a pointer away from both the main user interface region and the extension user interface region even when the main user interface region is not the active window.

99. The method of claim 92, wherein the main user interface region comprises a user interface for a media player, and the control regions included on the extension user interface region implement functions of play and stop.

100. The method of claim 92 wherein the main user interface region comprises a user interface for a media player, and

the control regions included on the extension user interface region implement functions of play, stop, pause, and change of track.

101. The method of claim 92, wherein a transition from the display presented in step (a) and the display presented in step (b) is made by sliding an image of the extension user interface region upwards when the main user interface region is located in the bottom half of the display, and sliding an image of the extension user interface region downwards when the main user interface region is located in the top half of the display.

102. The method of claim 101, wherein the extension user interface region flips from its upwards position to its downwards position when the main user interface region is dragged from the bottom half of the display to the top half of the display, and the extension user interface region flips from its downwards position to its upwards position when the main user interface region is dragged from the top half of the display to the bottom half of the display.

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